

DIST

COUNTY

ROUTE

POST MILES TOTAL PROJECT

SHEET No.

TOTAL SHEETS

X

X

X

X

X

X

REGISTERED CIVIL ENGINEER

X

DATE

PLANS APPROVAL DATE

X

No.

X

Exp.

X

CIVIL

STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

DISC SPRINGS AND WASHERS

L *	DISC SPRING					STEEL SPHERICAL WASHER			THICK WASHER		
	ID	OD	†	H	COLOR CODE	ID	OD	NOMINAL THICKNESS	ID	OD	†**
00.0 - 25.0	1.00	2.00	0.065	0.130	WHITE	1.19	2.25	0.50	1.03	2.00	0.25
25.1 - 31.9	1.00	2.00	0.084	0.136	RED	1.19	2.25	0.50	1.03	2.00	0.25
32.0 - 37.9	1.00	2.00	0.097	0.145	BLUE	1.19	2.25	0.50	1.03	2.00	0.25
38.0 - 45.0	1.25	2.50	0.120	0.180	YELLOW	1.31	2.50	0.50	1.16	2.00	0.25

* For limits of length L (ft), use effective length of cable, from face-to-face outer surfaces of anchorage plate or bearing bar. Refer to Bridge detail sheets for approximate length required.

** MINIMUM VALUE

NOTE: All OD and ID dimensions for washers and disc springs shall meet the dimensional tolerances for hardened steel washers, ASTM F436

RESTRAINER UNIT INSTALLATION PROCEDURE

- 1a. For typical 'girder to opposite girder' or 'bent cap to girder' restrainers with one adjustment end:

Place nut, washer and Thread Locking System on fixed end stud prior to tightening the cable

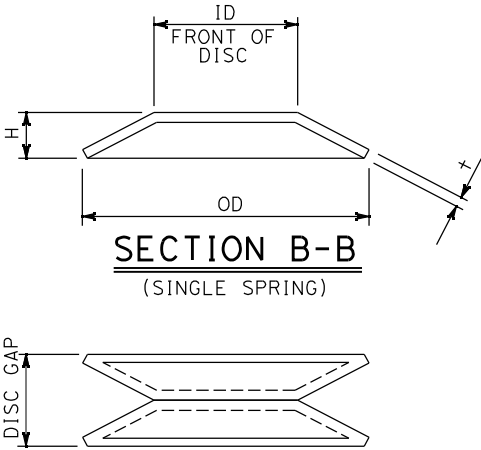
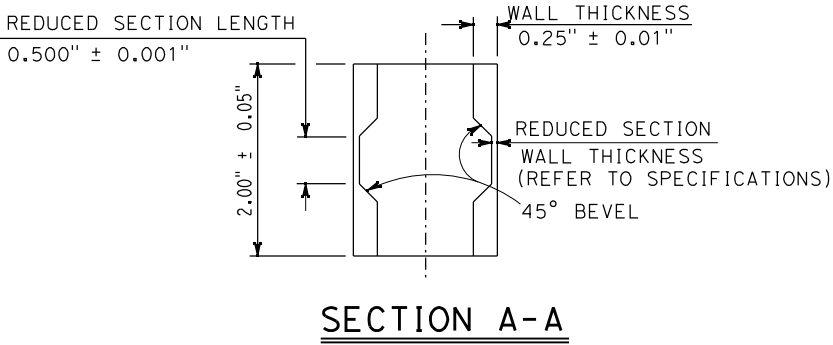
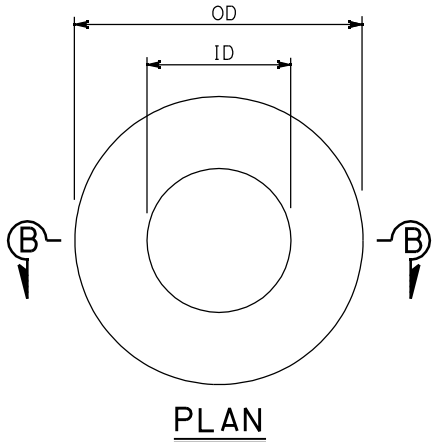
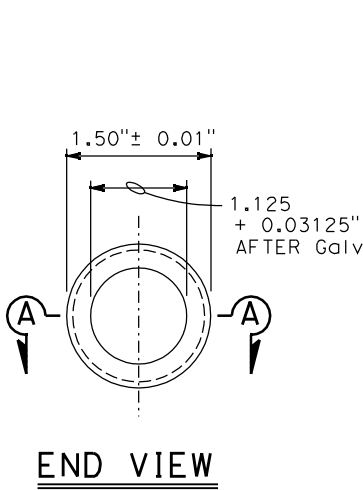
The adjustment end shall be at the same end of the cable for all restrainers at a specific hinge or bent

Tighten the nuts on the cable from the Adjustment End of restrainer until the disc springs collapse and there is no disc gap remaining between the discs
- 1b. For typical "U" or "V" shaped restrainers units with two adjustment ends:

Install Cable Yield Indicator, spherical washers, disc springs, washers and nuts on both adjustment ends of cable type restrainers

The ends of the cable must be adjusted simultaneously.

Tighten the nuts on the cable from the adjustment ends of restrainer until the disc springs collapse and there is no disc gap remaining between the discs on either end of the cable
2. Place thread locking system on adjustment end(s) after tightening the cable but before backing off the nut(s)
- Back off the nut(s) at the adjustable anchorage(s) a distance equal to the maximum additional amount that the hinge is expected to open, relative to existing ambient conditions, as shown on the plans for movement rating



AS INSTALLED ON STUD

"ALL DIMENSIONS ARE BEFORE GALVANIZING EXCEPT AS NOTED"

CABLE YIELD INDICATOR

NOTE: FOR DIMENSIONS NOT SHOWN, SEE TABLE

DISC SPRING